TITLE:

Teaching social science research methods to undergraduate medical students: The state of the art and opportunities for practice and curriculum development

ABSTRACT:

There is an expectation that medical students in the UK will be able to demonstrate conversancy with social science relevant to medicine and health including the means by which these bodies of knowledge are generated through the use of social science research methods. This paper explores the structural and pedagogical challenges and opportunities posed by this demand.

To achieve this we implemented a small scale research project seeking to establish the 'state of the art' with respect to teaching and learning about these research methods. This involved an exploration of the academic literature, a survey of UK Medical Schools and interviews with a small sample of colleagues engaged in teaching social sciences to medical students. We found that there is little formal reporting of practice in the literature and a field largely unsupported with materials and resources. However, there were some common features in the ways that practitioners approach, organise and deliver the provision. Medical students are widely engaged in activities involving reviewing and critical appraisal of academic literature which may include studies undertaken using social science research methods. Some also utilise social science research methods and methodologies in projects undertaken with patients and communities. The attention to quantitative methods may be less. Almost all the

provision takes place in the early part of medical education. Continuing problems with status of social sciences, lack of clarity about whether the purpose is to enrich medicine with knowledge about health and generated by the social sciences and/or explore the ontological and epistemological tensions between natural and social sciences coupled with the status of social scientists in medical education may limit capacity to develop the field.

KEY WORDS:

Social science research methods, medical education, curriculum and programme development

Introduction

The relationship between the social sciences and medicine has long and rich history which has, since the 1970s, been recognised in requirements that United Kingdom (UK) graduates in medicine must demonstrate knowledge about both the psychological and also social dimensions of health and medicine (Bloom 2002; Todd, 1968). Recently, in a revised version of the statement of expected outcomes of graduates in Medicine entitled 'Tomorrow's Doctors', additional emphasis has been placed on understanding of social science research methods (GMC, 2009). Specifically, graduates in medicine are now required to demonstrate that they can: "critically appraise the results of research including qualitative and quantitative studies as reported in the medical and scientific literature; formulate research questions and design studies including in those within a psychosocial paradigm; and, apply the findings of studies to specific clinical problem" (GMC, 2009: 18). A number of the other graduate outcomes spelt out by the profession's regulator also imply conversancy with social science research methods especially those relating to the knowledge base around population health and improving health and health care (GMC, 2009: 11).

The General Medical Council (GMC) does not provide detailed guidance in the form of a curriculum on how these outcomes are to be met. As a consequence individual Medical Schools within the UK exercise a considerable degree of freedom in terms of the organisation,structure and content of provision that enables learners to meet them.. There continue to be efforts to help populate this space through the production of core curricula by practitioners in the various fields and disciplines that make up medical

education (for example, on ethics (Stirrat *et al*., 2010), public health (Myles *et al*., 2013) and psychology (Bundy e*t al*., 2010)). Very recently, there has been work to plug the gap relating to the sociological contribution to medical education through the production of a core curriculum for sociology in medical education (Collett et al., 2016). This work involved extensive consultation with teachers, students, clinicians and patients (Brooks et al., 2011, 2013).

Despite increasing recognition of the contribution of social science research methods to medical practice (Alderson, 1999; Pope et al., 2000) and the publication of various textbooks and guides which either make reference to or deal directly with undertaking sociological research as a healthcare professional and/or research into social dimensions of health (e.g. Bell, 2005; Cunningham et al. 2013) detailed accounts of pedagogic practice are extremely rare and there has been no review of the literature (e.g. Rifkin and Hartley, 2001). As a consequence, little is known about the structure, content and organisation of teaching and assessment and the associated challenges and opportunities in educating undergraduate medical students about social science research methods (Brooks et al., 2013; Forrest et al., 2013).

Whilst evidence of lack of information about curriculum and pedagogic practice coupled with the imperatives of GMC requirements provide a sound rationale for research in this field it is important to recognise that there are also other additional motives.

First, post-graduation and especially in senior roles, medical doctors may play important roles in planning, commissioning, and undertaking research, some of which

may have social science components or include social science methodologies. This may be research with direct clinical relevance, involve service development or evaluation, explore patient or practitioner views or be undertaken by medics involved in and developing medical education. We should anticipate that interest in research in fields relevant to sociology and questions which have a sociological dimension or inflection will only continue to increase. This is an effect of the increasing importance of Evidence-Based Medicine with its focus on ensuring that service, treatment and care in all its dimensions draw on research and indeed a recent special emphasis on issues such as more and better understanding of patient experience of ill-health and attention to interdisciplinarity (Greenhalgh et al., 2014). In this context sociological research methods have much to offer in terms of doctors' abilityto ask and answer phenomenologically informed questions or to interrogate the links between health and social inequalities.

Second, the scale of the enterprise is important. The numbers of students studying medicine at undergraduate level in the UK at any one time stands at round 30,000 (HESA, 2014). This represents a significant body of learners, creating a great deal of scope for social scientists to reach into medical education and impact on the future thinking and practice of doctors. It is also the case that because of the potential scale of activity that understanding of the practice and experiences of teaching social science research methods in medicine represents an important contribution to understanding of thesocial science pedagogy that takes place outside the home discipline. For those sociologists already teaching in medicine, the support provided by a sense of what is it plausible, feasible and appropriate to teach by way of social research methods has obvious value.

Third, the opportunity represented by need and the size of the student body has to be counterbalanced against a broadly consistent body of evidence suggesting that teaching social sciences to medical students involves challenges. There is a need for an evidence base on which to better understand and address these. Understanding the specifics of pedagogic practice, structures, challenges and barriers around teaching social science research methods helps both to enrich our understanding of these broader issues and also their influence and what may be done to address them. Often reported challenges include those associated with the attitudes towards the social sciences held by both clinical staff and medical students. For example, members of both groups may struggle to see the relevance of social scientific knowledge and epistemological tensions between the disciplines represented in this multi-disciplinary environment are particularly manifest around assessment of knowledge and understanding (Russell et al., 2004; Scambler, 2010). Staff and student attitudes are situated within a series of connected structural problems. These include curriculum and timetable pressures, historic models of pedagogy which are characterized by extremely high levels of contact time, the status attached to provision of particular forms of factual knowledge creating a context in which social science teaching and learning may be lost such that is to be found ‘everywhere and nowhere’ in the provision.

This environment creates the opportunity to ask a number of pedagogically oriented questions with potential to support the development of teaching of social science research methods in undergraduate medical education. The paper reports on a piece of work focused on answering two of these questions: what is the current practice around

teaching social science research methods to undergraduate medical students in the UK; and, what are the challenges and opportunities for developing this teaching and learning practice?

In pursuit of answers to these questions we set out to: to establish current practice around teaching social science research methods to undergraduate medical students in the UK; and, to explore the challenges and opportunities around developing this teaching and learning practice and the curriculum and policy within which it is contextualised.

In practice, the focus of the research fell on identifying what is being taught, how teaching and learning are organised within the curriculum, how content is delivered, to and by whom and how student is learning assessed. The project was funded under the Higher Education Academy's Social Science Strategic Priorities for 2013 – 14.

Methods

In order to meet these aims we adopted a three stage approach to understanding the issue and data gathering. First, we sought to gain a greater understanding of the historical as well as current context for the field by exploring the literature relating to the teaching and assessment of social science research methods in medicine. This informed the development of a self-completion questionnaire, delivered online and targeted at all 33 UK Medical Schools with the purpose of gleaning information about relevant pedagogic practice and curriculum issues. The final stage in the process

involved talking with a convenience sample of 8 practitioners involved in teaching and learning around social science methods in medical education.

Literature search strategy

Reflecting the need to build a broad picture of the background, context and key issues as well as to establish an initial sense of practice in teaching social science research methods in medicine, we adopted a scoping approach to identifying, marshalling and reviewing the literature (Askey and O'Malley, 2005). Utilising Medline, Web of Science, Science Direct, JSTOR, EBSCO and ERIC databases we searched for literature using the following keywords and terms in various combinations 'social science' 'research methods teaching' and 'medicine'. The search parameters included publications since 1970 and available in the English language. The search produced, after exclusion of duplications and outputs of extremely limited or no relevance, a pool of around only 20 items. A narrative account of the outcome of the search is reported below.

Survey via self-completion questionnaire

Following the literature review we constructed a short online instrument comprising a combination of closed and scaled response items supplemented with free-text options that aimed to elicit information about the following:

- The content of teaching and learning with regard to social science research methods;

- The organisation of that provision including within the curriculum including who provides the teaching and to which students and in what context;
- Assessment related to the student learning;
- Materials and resources used to support teaching and learning;
- And, perceptions of the attitudes of staff and students to social sciences with medical education; student engagement and understanding of the materials and learning; structural challenges in organisation; delivery and assessment; contribution to the course, programme and medical education and practice more widely; and, a variety of factors that (would) help or hinder pedagogy in this area.

The survey was delivered online using open access survey technology. A copy is available on request from the author. It was open for a period of 2 months between March and May 2014. Distribution was via Directors of Programmes of Medical Education in UK Universities. The sample therefore comprised 33 Schools. Programme Directors were asked to direct the survey to colleagues within each programme with responsibility for the teaching of social sciences to students. Email reminders were issued at mid-point in the survey window. The survey yielded 19 responses (a response rate of 63%). All respondents were directly involved in teaching social sciences to medical students and also coordination of aspects of the programme in which the provision was contained. Further detail about their roles is reported later in this paper.

Interviews with practitioners

The initial plan was to conduct face-to-face consultation with practitioners working the field based on a sample derived from a preliminary analysis of responses to the survey. However, practical difficulties with convening, organising, timing and funding such activities meant that we substituted face-to-face interviewing with short telephone interviews. These were structured around the themes employed in the questionnaire survey. Twelve respondents to the survey suggested that they were available to provide interviews but ultimately only 8 could be organised in a timely and mutually convenient fashion.

Findings and results

Lessons from the academic literature

Our initial assumptions about the dearth of academic writing with a specific focus on teaching and learning of social science research methods in undergraduate medical education and their assessment proved to be well founded. The teaching of social science research methods is mentioned rarely in the literature as a focal concern. In general, where social science research methods are dealt with it is in the context ofbroader consideration of issues associated with teaching the social science knowledge base relevant to medicine rather than specific content or skills relating to research. The literature contained little information about the organisation of teaching and learning or its assessment. There was however some research and scholarship relating to teaching of the social in medicine which revealed a number of important themes and issues germane to the specific issue of teaching research methods.

Hierarchies of knowledge disciplinary and professional status

An underpinning concern surfacing in the literature relates to the importance of what might be termed macro-contextual or climatic factors. These include the power differentials set up by the dominance of the medical profession and medical knowledge in medical education. There is widespread agreement in the literature that the medical school replicates the hierarchy of the profession whereby,clinicians' knowledge is seen to rank above that of other health professionals and all these above the knowledge and expertise of social scientists. Status is determined by both 'hard' and 'soft' factors including pay differentials, organisational status and power perceived to flow from clinicians' authority derived from their clinical experience and practice. This hierarchy means that arguments constantly have to be mounted to (re) establish the relevance of social science to medicine (Bloom, 1989, Hafferty and Franks, 1994: Lempp and Searle, 2004).

Disciplinary foothold

It is also clear that the content of social science teaching in medicine is not easily aligned with what is regarded as the core content of the 'home' disciplines from which it emanates (Kemper at al., 1971; Russell et al., 2004; Scambler, 2010). Within medical education the social science contribution is often compartmentalised into topics such as 'death and dying', social and health inequalities', 'experience of chronic illness and biographical disruption'. This focus on specific issues runs the risk of disrupting any sense of the underpinning narrative of disciplinary history and theoretical content may be easily lost or indeed absent from the start (Hunt and Sobel, 1990). To take as an example a subject such as 'death and dying'. The social scientist

may teach itfrom a social perspective but learners are not oriented into their understanding via sociological concepts but more likely the context provided by the clinical issues arising from provision of end of life care. Similar challenges can arise around such complex areas as doctor-patient interactions where medical students are extremely unlikely to have or be provided with grounding in a sociological understanding of power. This poses challenges around the notion of engaging students in deep learning and consideration of 'threshold concepts' (Land et al., 2008) with respect to the social sciences. Understanding tends to be inextricably linked to the extent that the content can be seen to have clinical relevance.

On a more positive note, there is some evidence of interest and engagement with the potential of experiential learning as a context for student acquisition of social scientific understanding and knowledge. There are some indications that social scientists teaching in medicine can traction both student interest and engagement through judicious deployment of clinical relevance. For instance, using patient experience and contact and/or project work within the wider patient community as the context for learning about the social basis and context of medicine and health. The may extend to helping students understand the purpose and indeed implementation of research methods (Dornan et al., 2006; Dornan et al., 2009). Essentially, the accounts in Dornan et al. reflect practice in which relevant sociological concepts can be materialised through student contact with the 'real world' and sociological research methods sometimes employed by them to understand it. Although evidence is not abundant, there is some research pointing to the use of studies of long-term conditions in individual patients as the context for social science teaching about topics such as biographical disruption and also qualitative research methods (Kumagai, 2009).Other social scientists report using case material drawn

from clinicians' experience to teaching about ethnicity, cultural influences on health and intercultural communication (Hart et al., 2008). Student perspectives on the value of contact with the patient and the community in which they live are rare; but Thandi et al. (2016) is an example of reflective writing suggesting that students may develop a sensitivity to the social context as relevant to medicine through experiential learning and also begin to understand the relevance of sociological research methods to understanding that context.

Attention is also drawn to the issue of curriculum time and the timing of provision (Benbasset et al., 2003; Moore, 2008). The important distinctions between phases in medical education (generally defined as the initial phase which is 'pre-clinical' and largely University based, and 'clinical' phase which tends to take place in hospital and General Practice settings) are noted, as is the tendency for social science content to be squeezed into the 'pre-clinical' phase. This is widely regarded as an environment at risk of being over-populated with content reflecting the many and various disciplines which feed into medical education. The challenge of providing students with a sense of theclinical relevance of social science teaching is most keenly felt in the pre-clinical phase because of lesser exposure to patients in healthcare contexts. However, somewhat paradoxically, inthe 'clinical' phase, where that relevance ought to be very apparent and accessible there seems to be little teaching time dedicated to the social sciences and almost no presence of social scientists. One reason for students not considering the social sciences in the clinical years may be thatthe clinical urgency of the patient encounter motivates them but may also constrain their capacity to absorb additional information and knowledge (Hunt and Sobal, 1990).

Structural, conceptual and pedagogical problems are compounded by the lack of materials and resources to support social science research methods teaching in medicine. Whilst there are guides to undertaking social science research in healthcare environments, these are not generally targeted towards the undergraduate learner and do not contain information about how to teach these skills (Bell, 2005; Cunningham et al., 2013). There appears to no obviously identifiable repository for practical teaching oriented resources although some organisations curate collections of materials and networks through into which social scienctists can reach to access advice and materials from other practitioners. (For example, the UK network of Behavioural and Social Scientists Teaching in medicine (BeSST) www.besst.info, the US-based network Structural Competency https://structuralcompetency.org, and French organisation Le College de Sciences Humaines et Sociales http://collegeshsenmedecine.edu.umontpellier.fr

A final, important, albeit rarely made observation, is that the contextual, intellectual and practical challenges posed to the teacher of social sciences in medical education may be precisely what attracts some colleagues to work in this environment. The relative freedom represented by the environment coupled to opportunities to have direct influence on doctors and medical practice can be attractor to some social scientists (New and May, 1968).

The survey

The survey of colleagues involved in social science input into programmes of medical education in UK Medical Schools provided both some confirmation and elaboration

of issues arising from the literature and detail about current curricula issues and pedagogic practice.

Respondent role and responsibilities

Respondents to the survey (N=19) were asked to provide information about their role and responsibilities and relationship to the teaching of social science research methods in UK Medical Schools. Respondents occupied a range of roles both within and in relation to Medical Schools. This reflects the diverse ways in which Schools, Faculties and associated Research structures are organised. While the majority of respondents (n =15) described themselves as employed directly within Medical Schools, 4 were located in Research Units, Groups,Institutes or Faculties attached to the School. For these colleagues, their management was not directly under the aegis of the programme of medical education although they had teaching responsibilities within it. Both locations were seen as having advantages and disadvantages. Amongst those respondents located within teaching Schools some saw themselves as well placed to understand programmes, including the opportunities for integration of teaching and learning and positioned in ways that gave them access to some influence on programme and curriculum design and development. Some of the benefits of the 'insider' were perceived to flow from opportunities for greater interaction with staff and students. Some of the same respondents mentioned disadvantages. These were perceived to be around the demands to contribute to a great deal of teaching-related and other administration and especially, the risks of becoming disconnected from 'home' disciplines.

Career pathways were not particularly clear to those respondents located within programmes. Of the 15 colleagues in this position only 4 agreed or strongly agreed

with the statement that ‘there is clear career pathway (progression and promotion) for social scientists within my School’. Those fewer respondents located in research units, groups and institutes allied to programmes perceived greater opportunities to maintain a research profile relevant to their discipline, but felt distanced from programme organisation and staff and students contact in ways that meant they were less clear about the alignment of their contribution to student learning and the programme as a whole.

Key both to role, responsibilities and career was the extent to which respondents had control, authority and accountability for the social science component within programmes. In all 19 Schools there was a clear curriculum context for social science teaching as a whole. Social sciences were in some places (n = 8) located in a specific ‘strand’ and in the remaining 11 Schools part of a wider curriculum area. In these cases typically social sciences were located in curriculum areas dedicated to sociology and psychology (in 6 Schools) or conjoined with areas regarded as cognate such as Ethics and/or law, Public Health and Professional Development (5 Schools). Respondents had various leadership and management roles (and hence opportunities for curriculum control). These were confined to colleagues located within teaching Schools rather than primarily in affiliated research units. Amongst these, 13 described themselves as having a leadership role for social science teaching and learning in medical education. These generally comprised responsibility for the implementation of the social science ‘strand’ within the curriculum. In cases where the strand was conjoined to other topic areas colleagues were members of teams with that responsibility. All respondents were members of Programme Boards, Boards of Examiners and therefore engaged in aspects of quality assurance as well as curriculum

management, operation and oversight related to teaching and learning. Most either agreed or strongly agreed (10 of the 13) that they had a degree of operational authority with regard to delivery of the subject. However, free text comments suggested that it is perceived that the degree of autonomy is limited because decision-making relating to content and very often the ordering of provision is principally determined by the clinical and medical 'core' of the curriculum. An example would be that the ordering of topics to be taught under the aegis of the social sciences was determined by the ordering of teaching of anatomy, physiology and so on. Typically teaching was oriented round (fictious) patient cases and the sequencing derived from the logic of the natural science content not that of the social sciences.

The disciplinary background and career trajectories of respondents were diverse with many having a background in health-related research (n = 16) but few having made a conscious choice *ab initio* to pursue a career in medical education. Respondents described themselves as variously sociologists, medical sociologists, psychologists and health psychologists, anthropologists and public health practitioners/academics.

The organisation and content of teaching and learning about social science research methods

All 19 respondents identified provision which aims to help students meet the high-level learning outcomes for graduates laid down by the GMC in 'Tomorrow's Doctors'.. There was a fairly high degree of commonality in the nature of the content and broad picture of its organisation.

The survey confirmed that there it is a nearly universal practice for social science input to medical curricula to be ‘front-loaded’, that is to take place in the first two ‘pre-clinical’ years. It is widely the case that social sciences are integrated into this curriculum rather than having a strong discrete profile. The detail of some examples is described below, but in organisational terms the provision tends to sit alongside areas such as public health, evidence-based medicine, project work and to be represented in specific elective projects undertaken by students. As mentioned earlier, typically the ordering of the social science content is dictated by the clinical and medical content. In cases where ‘pre-clinical’ curricula followed a life-course approach, so too did the social science component.. A topic such as teaching the critical appraisal of qualitative research - a common element in the majority of programmes (n = 17) – primarily took place in the context of students being set a task related to a clinical or disease condition (n = 9). However, it is important to note that in the remaining 8 schools where students undertook a critical appraisal task, they were able to select topics which ranged much wider including, for example, the relationship of ill-health to social context or aspects of lifestyle, behaviour and health.

Coupled to teaching and learning about the critical appraisal of psychological or sociological research was provision more generally described as promoting to students its epistemological value and hence seeking to emphasise its importance to clinical/medical practice. A key context for this is through student selected components/modules or electives. These are areas of the curriculum in which students are able to exercise a degree of choice over the topic or area of study which they can address in undertaking an assessed activity such as small scale review of academic literature or audit. On occasion, and especially in the clinical phase of their studies,

they may be able to contribute to a research project using a social science research method.

Elective opportunities are very different in character in the pre-clinical years to those that follow. All 19 schools reported offering some kind of elective/selected component in years one and two. However, these usually comprised conducting reviews of academic literature related to a topic. The scope of developing an understanding of social research methods is therefore limited to that which arises from appraisal of writing about empirical research. All Schools also offered electives in the 'clinical' phase. These are characteristically more student-led and in 15 schools there were opportunities for students to work with social scientists on 'real world' research. Usually this involved contributing to data analysis rather than fieldwork. There were a few opportunities (reported in 8 Schools) for students to utilise social science methods in practice where the project had a medical education dimension and might involve, for example undertaking a focus group discussion to garner insight into student experience and evaluation of an innovation in teaching and learning practice.

Subject delivery

Teaching in all Schools involved a social scientist although backgrounds were diverse.,Respondents identified as sociologists, psychologists, anthropologists and public health experts. All respondents reported involving other specific subject or topic experts in provision. The choices seemed to be partly pragmatic reflecting locally available (and enthusiastic) expertise. The involvement of patients/people with experience was also widespread (mentioned by all respondents). It was noted that this

could ‘ground’ the learning and demonstrate how important the social aspects of health and healthcare are to patient experience. A challenge was identified with supporting learning in social science that took place under the aegis of non-subject experts. These are frequently General Practitioners. A number of respondents (n = 15) felt that GP tutors had an awareness of the technological and practical aspects of social science research methods but that their contribution on the epistemological and methodological aspects was often hampered by lack of qualification, expertise, experience and confidence.

Quantity of provision

The quantity of provision varied between institutions. Respondents were aware of this largely through participation in academic networks that extended into other Medical Schools: some were members of other practice networks (n = 17); others undertook external examining duties (n = 9). Estimating the time allocated to teaching of social and behavioural sciences as a whole was difficult (and especially in Problem-Based Learning courses where contact time with staff is lower and student-directed learning greater). The same problem was noted with respect to reckoning the specific time allocated to teaching of social science methods. Most respondents (n = 16) could identify a lecture, workshop or tutorial where research methods were a central element or focus but reported that provision was both diffused over time and often focused on few rather than all students. For example– the subject might come up in several sessions in different ways ranging from describing a research method when detailing a specific study related to a topic under consideration to asking students to consider quantitative data relating to a social aspects of health and medicine.

Provision early in programmes tended to reach all students but over little time.–Much more teaching was given to individual or small numbers of students through electives and the associated projects. These projects, especially when they involved students in the 'clinical years' might last several weeks and involve intensive collaboration with the teacher in research activity.

Quality of provision

Respondents (n = 17) generally felt that topic coverage was satisfactory given the constraints on timetable time but that some topics were more difficult to cover and convey than others. Quantitative methods were not felt to be easy to teach and student understanding of quantitative data and especially statistical tests used in social sciences and their significance to be highly variable. Challenges with teaching about qualitative methods clustered around concerns that student perceived qualitative research to be of lesser value and rigour than studies employing quantitative methods.

Assessment of student learning related to social science research methods

All respondents reported that learning about social science research methods was assessed. Modes of assessment included multiple choice and other closed response questions integrated into summative papers and, essays and project reports where these were part of the diet. Many respondents (n=13) perceived that there was pressure flowing from staff-student ratios, orthodoxy in medical education and understanding of knowledge types and acquisition among medical students to undertake assessment in forms not always amenable to social science knowledge.

Marking loads associated with project work were identified as problematically high and a deterrent to maintaining these forms of assessment.

Teaching and learning materials and resources

Respondents were highly generative of materials and resources to support their teaching and student learning. No respondent identified a single access point to 'off-the shelf' teaching materials. As noted above, academic and professional networks were significant for many in locating either materials or exploring ideas for delivering and structuring teaching and learning.

A number were working in Schools and within curricula which contained projects within which students were expected to employ social science research methods as a means of generating information or data to be reported in assessed work. Projects focusing on aspects of health within families, including maternal health, infancy and childbirth, and the health-related work or contribution of non-clinical organisations, were identified. Projects focusing on the family in one form or another were much more common than those based in the wider community (10 respondents mentioned family oriented projects versus only 5 projects based in the wider community). In a few cases these projects involved students in immersive engagement in the context (a family or community) and gathering of observational and interview data, which would then be coupled to sources such a medical records and local information on demography, socio-economic environment and context, and synthesised in to substantial written reports or essays.

Attitudes of staff and students

Respondents were ambivalent about whether staff and students recognised the value of teaching and learning about social science research methods. Most (n = 16) felt that some did but that there were pockets of resistance. This resistance was based on absence of understanding of the significance for future clinical practice and the tactical approach that students take to learning where assessment is high stakes, frequent and requires acquisition and recall of very high quantities of information.

Structural challenges to teaching and learning, which all respondents mentioned at least one, included allocation of teaching time, access to students in Phase 2, assessment types and quantity of work, and student engagement with bodies of knowledge and ideas with which most have no prior familiarity, and which may seem hard to relate to their perceptions of the doctor's professional role and responsibilities and their motivations for studying medicine.

Talking to practitioners

For practical reasons described above, we consulted with 8 respondents to the survey via short telephone interviews. These were structured around the themes employed in the questionnaire survey. Respondents were selected entirely pragmatically on basis of availability. These interviews revealed the following main issues and concerns.

Defining social science research methods

There is some lack of clarity about what social science research methods are. For example, interviewees mentioned both specific methods (surveys, interviews and focus group discussions), analytic techniques and also topical content as potential components in a definition. It was felt that the problem arose in important ways from the lack of a clear disciplinary identity or understanding within medicine, rather than within social sciences where these issues do not arise. There was recognition that discussion and debate within medicine and with medics and other involved in medical education would help to clarify the issue. As one interviewee put it,

> "I know what I mean when I think about social science research methods but I don't think that's clear to medics or students. My sense is that they think of methods of data collection, especially qualitative methods. I don't get a sense that there's much more than a technological approach…nothing much about epistemology or the derivation of these methods."

A serious challenge to teaching epistemology and ontology relevant to social science research methods was identified as arising from the risk of a technocratic view of what a social science research method is and is for. This was connected to responses which identified the problems posed by working towards learning outcomes which refer much more to content than ideas and philosophy. This was seen as side-lining student learning about the core concepts underpinning social science and its research practice. One interviewee put it like this,

> "I often wonder what an albeit low level learning outcome like 'demonstrate understanding of data produced by a survey' means. They [students] don't know why we do surveys or how they relate to ideas about knowledge production or why we might analyse quantitative data… in specific way. I think it's kind of assumed either that doesn't matter or it's contained in the very content focused and atheoretical learning outcomes we have."

Time, content and outcome/purpose

Constraints on contact time and student capacity to engage in learning activities such a reading and reflection were identified as challenges bearing on the design and delivery of teaching and learning about social science research methods in medical education. Some interviewees suggested that outcomes need to be modest and proportionate and underlined that medical students are not being trained to be social science researchers but effectively well-informed consumers and users of its outcomes. There was consensus that increasing content was impractical and possibly counter-productive and the routes to developing and enhancing provision lie in better integration of learning into existing curricula.

There was also widespread recognition that there are tensions between social science and biomedical approaches to bodies of knowledge which present challenges but may also provide the 'teachable moments' which allow students to understand the critical and valuable relationship between them. Respondents talked about the differences between conceptions of rigour and bias in the social sciences and medicine, the subtly different ways that ethical concerns are framed and dealt with by social and

biomedical scientists, the core ideas of 'normal' and 'abnormal' presented by biomedicine and the relationship and difference between reflection and reflexivity. This was neatly summed up by one interviewee as follows,

> "The temptation is to suggest that what we need is more time. I think it starts somewhere else which is considering what it is really useful and important for students to know. Realistically they're not social scientists, we don't want them over-estimating their capacity or skill to be that, or to accidentally undermine the understanding of the skill, expertise and training that takes. I think we need more of the right time – getting into the clinical years feels important and we do reach the few with interest in social dimensions and issues in medicine and health…I'd like to have more of that opportunity. I'd also like them to better understand what social science has to offer in terms of research and for that to be seen as valuable but different to the biomedical perspective."

The 'front-loading' of provision into the medical degree is seen as challenge. It was felt that it makes it difficult for students to see the relevance of teaching and learning to clinical practice (which begins in earnest in Phase 2). The general absence of opportunities to teach into Phase 2 was perceived as meaning that not only were teaching opportunities missed but that it made it more difficult for teachers of social sciences to see how knowledge was employed and hence to reflect on and develop teaching in earlier years.

The value of experiential learning, data collection and handling

Project work involving students in collection, analysis and presentation of 'social science' data were mentioned as important contexts for teaching and learning. Engagement with patients in the community via studies of long-term (chronic) illness and/or pregnancy, and opportunities to use social science methods and knowledge to interpret and enrich their understanding of patient experience were cited as good ways of enabling students to "learn through practice", and "see the realities of what social science research has to offer and takes to do".

Student electives were identified as important opportunities for learning. Some interviewees described those made available to and required of all students (particular in the pre-clinical years) as examples of ways of introducing students to social science research methods. Tasks such the critical appraisal of literature were cited as "small steps" into the unfamiliar world of social science research which, "had value in terms of raising awareness and showing that how we generate knowledge provides insights not otherwise accessible to medics".

Electives in the clinical phase were regarded as valuable contexts for one-to-one supervision of students seeking to develop a deeper understanding of social science research and its practice. A small number of interviewees have had opportunities to offer medical students the chance to work as research assistants on social science projects allied to or situated in medicine. These were felt to be particularly powerful learning experiences although the impracticality of offering them to all students was noted.

The opportunity presented by health and social inequalities and interest in lifestyle factors and health

The increasing recognition of the importance of the links between health and social inequalities and the impact of lifestyle factors on health, was welcomed and identified as key topical arenas for teaching and learning about social science research methods. One interview gave a detailed account of utilising open access datasets that contain behavioural/lifestyle data, demographic and information about health perceptions to engage students in active work with accessing, manipulating and analysing data derived from social science research. The availability of these resources coupled to a rise in political, policy and health service interest in "the social basis and dimensions of health" was seen as creating a positive and legitimising environment for teaching. The impact of providing of 'hands on' experience of data handling in a skills oriented way was regarded as positive. One interviewee reported on student feedback by way of evidence,

> "I used some of the open access data on lifestyle, health-related behaviour and demography to get students thinking about quantitative data and social science. They had to create simple tables showing self-reported exercise against gender, for example. I felt it was great way for them to see how we get 'the numbers' and also to run a simple statistical test. Of course I was also keen to get them thinking about gender and seeing the predictable differences was a great way to make it material for them that women and men do this differently…I think that they enjoyed the practical challenge of working the data too."

Teaching resources and materials

The lack of teaching materials and resources relevant to teaching social sciences research methods was a common concern amongst interviewees. Generally, they regard the field to be poorly supported in this regard. This was especially keenly felt by colleagues located in Medical Schools where connections to other academics who teach research methods in social sciences tended to be perceived as extended and often weak. Interviewees talked about a range of support that would be useful including session outlines, materials and resources for use with and by students. It was noted that resource and expertise with regard to quantitative analysis was particularly important given that importance of students understanding concepts such as statistical significance and how measures of this are arrived at. All interviewees had developed their own materials and resources or adapted ideas borrowed from colleagues.

Staff and student attitudes and engagement

The interviews added considerable nuance to the survey findings around colleagues' perceptions of student and staff support, engagement and understanding of their work in teaching social science research methods. One interesting suggestion was that understanding among clinical colleagues of the relevance and importance and hence support for social science teaching as a whole was often high among GPs for whom the social dimensions of health were readily perceived in their clinical practice. This was in tension with the sense that whilst GPs understood its relevance they were not

necessarily best placed to teach the subject. Engagement and support was felt to lower among colleagues with a 'pure' science or clinical roles with less patient contact. Student engagement was regarded as highly variable; the picture of student lack of understanding and confidence around social science being nuanced by accounts, especially relating to individual students, of very high levels of engagement. The importance of people with experience/patients in programmes was also mentioned. These contributors could through their accounts of health, illness and health service use, provide concrete ways to introduce students to the importance of the narrative approach to researching experience, for example. One interviewee also emphasised the value of external examiners with a social science background seeing them as advocates and experts with high status with respect to programmes and able to promote and also constructively support the development of their practice.

The career pathway

The potential risks and consequences of adapting a career as a social scientist to medical education were clear. Interviewees were overwhelmingly committed to making a contribution to medical education, largely perceiving the opportunity to have an influence on future medical practice as both satisfying and a route to improving patient experience and outcomes. However, there are challenges around professional and intellectual identity and developing and maintaining a portfolio of activities commensurate with academic interests and career plans.

Although the issue has dimensions which exceed the specific matter of teaching research methods, largely related to the way that social science and social scientists

are positioned within medical education, research methods were important because of the way that academic and disciplinary identity are bound up with the generation of knowledge.

> "It is difficult to know how you'll get on in this world [medical education]. There are very few senior people in Medical Schools other than clinicians. Although it's difficult to do I see teaching social science methods as critical to my identity as an academic…it's what we do, we teach them to students but it's half the story. The point is to generate knowledge and understanding and I feel like being able to communicate the 'how' and 'why' go together. It's also what makes me who I am. If we can't do it justice it suggests the role of the social scientist is somehow inferior or subordinate to that of other types of research."

Discussion and conclusions

This study set out to address two questions: what is the current practice around teaching social science research methods to undergraduate medical students in the UK; and, what are the challenges and opportunities for developing this teaching and learning practice?

It is small in scale, limited it reach and only provides a snap-shot of the 'state of the art' but it is nonetheless, revealing about respondents' experiences as well further highlighting of the kinds of problems which it has been shown cluster around the teaching of social sciences in medical education It is possible to share a number of preliminary conclusions based on this project:

There is evidence that UK Medical Schools are active in trying to meet the requirements laid down around outcomes expected of graduates that they will have demonstrated conversancy with social science research methods. However, what this means in terms of specific content and student acquisition of knowledge, understanding and skills, is not clearly defined by the regulator. One of the implications of this is that the shape and form that practice takes reflects more proximal influences. These include the ways that the demands of the clinical/biomedical aspects of the curriculum position the social sciences and the way that they shape the programme of teaching and learning. The times and places within the curriculum where teaching about social science research methods takes place and its content seem to be ordered and constrained by these.

The overarching organisational feature of the provision is that it is characterised by a tendency toward provision to be located in the earlier part of curricula, usually in the first two years or 'pre-clinical' years. In this context, the work on research methods is often integrated into other topics and themes, especially behavioural and social sciences, public health, evidence-based medicine, project work and student selected or elective projects. The teaching is often linked to issues of long-term conditions, studies of the family, health and social inequalities in particular, and, also requirements for students to be effective at critical appraisal of research evidence.

There are indications that some interesting and possibly innovative work is taking place using community-based projects undertaken by students. These are contexts for the development of their understanding and skills in social science research. Accounts

of activities in which students are required to conduct semi-structured interviews with families or patients around health-related matters or specific conditions and, in a few cases, observational studies in non-clinical community settings, suggest a rich vein of practice which warrants further attention. This work tends to focus on qualitative research methods and methodologies. There are also, either in connection with these projects, or separate to them, examples of practice in which students engage with quantitative data (available through open access sources) to explore data handling and analysis and relationships between social factors and health. A few students may choose to undertake an elective study in the 'clinical' years which allows them to work more closely with a social scientist on research.

There are concerns about the extent to which experiential learning about social science research methods is appropriate given that medical students are not fully grounded in social science disciplines and that it may set up false expectations about their expertise and also, unintentionally, undermine the credibility of social sciences.

Materials and resources for supporting teaching and learning are not easy to access and often developed in-house. Professional networks and personal connections between academics are extremely important as means of garnering advice, ideas and sometimes materials to support teaching and learning.

The broader context in which social sciences are perceived to remain somewhat peripheral in medical education, both in practice and in epistemological terms, continues to be a concern to practitioners. It creates an environment in which teaching about social science research methods does not have the status of clinical/medical

content. The optimistic view is that their obvious relevance to clinical practice and patient care provides means of influencing this environment. Greater access to the 'teachable moments' which are perceived to arise in the clinical years is regarded as one way of achieving this.

This work also invites us to reflect on two more fundamental questions alluded to at the beginning of this paper. The first is the importance of clarifying the purpose of the contribution of teaching social science research methods to medical students. The second is to consider whether it is viable and feasible to meet the apparent demand for students to understand both the empirical contribution of social science to medicine and its potential ontological and epistemological challenges to the natural sciences on which medicine is founded.

The relevance and importance of social sciences to medicine is not contested. Support from clinicians and indeed representatives of the regulator, patients and student is clear (Collett et al., 2016). However, the learning outcomes spelt out by the GMC do little to explain in an explicit way the purpose of requirements for specific knowledge about social science research methods. Careful work to link the learning outcomes to clinical practice and ultimately patient benefit would help to inform the debate about the exact content of social science teaching in medicine, and its methods and modes of assessment.

This work suggests that purpose as perceived by practitioners is equip doctors to better understand their patients, causes and responses to health and disease and provide better patient care and also potentially more effective services. It also has the

potential to position medicine and doctor in the context of what it can and cannot do. For example, doctors can through understanding social science research come to recognise that social inequalities underpin health and that the greatest influence on these factors in not medicine but public policy. If, for example, equipping future doctors with knowledge and understanding of social research about medicine and health set out to increase their sensitivity to individual patients and motivate them around their wider social role as agents of change, became an agreed aim it would affirm a clear role for the social sciences and social scientist in medical education.

With regard to the second question, it is apparent that the issue of the ontological and epistemological differences between social and biomedical sciences concerns practitioners and is identified as a root cause of a number of tensions and problems. These include the academic/disciplinary status of social scientists in medicine, engagement and attitudes of students and the practical aspects of assessment. We seem to be at something of a crossroads. It is possible to imagine that teaching about social science research methods – which particularly expose these fundamental philosophical – could be limited to ensuring that students can consume and understand the content and implications of social science research in health and medicine. A more radical option would be to embrace the philosophical tensions and explore how they might be exploited to help students develop complementary views of the world and environment in which they will operate. This offers the possibility that the clinician would embody not only biomedical knowledge but ways of seeing and understanding their patients, practice and communities that they serve as social entities. This project has not answered that question but suggests that there is energy

and enthusiasm for discussing amongst the social scientists working in medical education.

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References

Alderson, P (ed) (1999) *Qualitative research: a vital resource for ethical healthcare*: Proceedings of the conference organized by the UK Forum for Health Care, Law and Ethics and sponsored by the Wellcome Trust Biomedical Ethics Programme 20 October 1999, London Volume 2. London: The Wellcome Trust.

Askey H. and O'Malley L (2005) Scoping studies: towards a methodological framework, *International Journal of Social Research Methodology* 8(1): 19-32

Bell J (2005) *Doing Your Research Project: A Guide for First-Time Researchers in Education, Health and Social Science* (4th ed.) Buckingham: Open University Press.

Benbassat J, Baumal R, Borkan J and Ber R (2003) Overcoming Barriers to Teaching the Behavioral and Social Sciences to Medical Students *Academic Medicine* 78(4) 372-380

Bloom SW (1989) The medical school as a social organization: the sources of resistance to change *Medical Education* 23(3): 228–241

Bloom SW (2002) *The Word as Scalpel: A History of Medical Sociology*. Oxford: Oxford University Press.

Brooks L, Collett T, Forrest S, Greene A, Kendall K and MacBride-Stewart S. Sociology in Medical Education: State of the Art and Future Directions, *British Sociological Association Medical Sociology Annual Conference*, York, 11-13th September 2013

Brooks L, Collett T and Forrest S Teaching sociology to medical students: challenges and opportunities, workshop presented at the *BSA Medical Sociology conference*, Chester University, 14th September 2011

Bundy C, Cordingley L, Peters S, Rock J, Hart J and Hodges L (2010) *A core curriculum for psychology in undergraduate medical education: a report from the Behavioural & Social Sciences Teaching in Medicine (BeSST) Psychology Steering Group*. York: Higher Education Academy Psychology Network and Subject Centre for Medicine, Dentistry & Veterinary Medicine

Collett T, Brooks L, Forrest S, Harden J, Kelly M, Kendall K, Macbride-Stewart S, Sbaiti M and Stevenson F. (2016) *A Core Curriculum for Sociology in UK Undergraduate Medical Education: A report for the Behavioural & Social Science Teaching in Medicine (BeSST) Sociology Steering Group*. Cardiff: Cardiff University

Dornan T, Littlewood S, Margolis S, Scherpbeir A, Spencer J and Ypinazar V (2006) How can experience in clinical and community settings contribute to early medical education? A BEME systematic review. *Medical Teacher* 28(1): 3–18

Dornan T, Scherpbier A and Boshuizen H (2009) Supporting medical students' workplace learning: experience-based learning (ExBL). *The Clinical Teacher* 6: 167–171

Forrest S. Brooks L and Kendall K (2013) Doing sociology in a foreign country: teaching qualitative research methods in medicine, *HEA Social Sciences annual conference - Teaching research methods: Developing a pedagogical culture in the Social Sciences*. Liverpool, 23rd-24th May 2013

Greenhalgh T, Howick J and Maskrey N. (2014) Evidence based medicine: a movement in crisis? *British Medical Journal* 348:g3725

Hafferty FW and Franks R (1994) The hidden curriculum, ethics teaching, and the structure of medical education. *Academic Medicine* 69(11): 861-71

Hart J, Harrison C, Boggis C and Cordingley L (2008) *Improving communication using PBL plus: Observing excellent and poor medical interviewing*. AMEE - Association of Medical Education in Europe. Prague.

Higher Education Statistics Agency (2014) *Students in Higher Education: 2012/13*. London: HESA

Hunt G and Sobal J (1990) Teaching Medical Sociology in Medical Schools. *Teaching Sociology* 18(3): 319 – 328

Kemper TD, Fritz HB and Kelner M (1971) Social Science in Schools of Medicine: Problems, Prospects and a Program. *The Milbank Memorial Fund Quarterly 49*(2): 244-273.

Kumagai AK (2009) The Patient's Voice in Medical Education: The Family Centered Experience Program. *Virtual Mentor* 11(3): 228-231.

Land R, Meyer JHF and Smith J (2008). *Threshold Concepts within the Disciplines. Educational futures rethinking theory and practice* Rotterdam and Taipei: Sense Publishers.

Lempp H and Seale C (200) The hidden curriculum in undergraduate medical education: qualitative study of medical students' perceptions of teaching. *British Medical Journal* 329(7469): 770-773.

Moore J (2008) Practitioner-researcher Imaginations: Teaching Social Research to Health Science Undergraduates. *Focus on Health Professional Education: A Multi-disciplinary Journal* 10(2): 1-21

Myles P, Barna S, Maudsley G, Watson K and Gillam S on behalf of participants of the Joint Public Health Educators in Medical Schools (PHEMS) / Faculty of Public Health (FPH) (2014) *Undergraduate Public Health Curriculum for UK Medical Schools 2014: a consensus statement.* King's College London: PHEMS network

New PKM and May JT (1968) Teaching activities of social scientists in medical and public health schools. *Social Science & Medicine* 2(4): 447-460.

Pope C, Ziebland S and Mays N (2000) Analysing qualitative data. *British Medical Journal* 320:114

Rifkin S and Hartley A (2001) Learning by Doing: Teaching Qualitative Methods to Health Care Personnel, *Education for Health 14(1):75 – 85*

Russell R, Van Teijlingen E, Lambert H and Stacy R (2004) Social and behavioural science education in UK Medical Schools, current practice and future directions. *Medical Education* 38: 409 – 417.

Scambler G. (2010) Sociology in Medical Education In Brosnan C and Turner B (eds) *Handbook of the Sociology of Medical Education*, London and New York: Routledge.

Stirrat GM, Johnston C, Gillon R and Boyd K (2010) Medical ethics and law for doctors of tomorrow: the 1998 consensus statement updated. *Journal of Medical Ethics* 36:55-60

Thandi CS, Forrest SP and Williamson C (2016) The role of early inter-professional and inter-agency encounters in increasing students' awareness of the clinical and community context of medicine. *Perspectives in Medical Education* 5:240–243

Todd Report, (1968) *Report of the Royal Commission on Medical Education 1965 – 1968*. London: HMSO.